Early versus Later Respondents in Intranet-based, Organizational Surveys*

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ABSTRACT

Differences between waves of respondents (earlier versus later) has been assessed in past survey results to detect possible bias in relationships between attitudes and response time. The measurement of response time was imprecise in these mail surveys. This paper investigates differences of earlier and later respondents using two cross-cultural employee surveys with an on-line administration mode that provides a precise measure of time. We find that return time is unrelated to scale values of job satisfaction, organizational commitment, and other survey items. However, some regional or cultural differences in responding earlier or later to an employee survey are observed.

Introduction

The notion that persons who respond early to a survey differ in their attitudes from persons who answer later is widespread among survey experts (e.g., Pearl and Fairley, 1985, Green, 1991; Dalecki, 1993). In employee surveys, this notion seems particularly compelling, because employees who are not very committed to the organization or who are highly dissatisfied with their job appear to have few reasons to participate at all in the survey. In any case, it seems plausible that extra efforts are needed to motivate them to participate. Among such extra efforts are, in particular, repeated reminders and appeals to take part in the survey.

Aside from the additional efforts required to encourage participation, the non-trivial question exists whether early respondents differ from later ones. That later respondents are more negative in their attitudes or less committed is not the only possible hypothesis. Porst (2001), for example, surmised that early respondents are more extreme in terms of satisfaction or dissatisfaction than later respondents. The rationale is again a motivational one: Highly dissatisfied employees may have a stronger intention to change things, and highly satisfied employees feel more obliged to support such common activities.

In general survey research, one also finds speculations that early respondents differ from late respondents with respect to background variables such as age or educational level. The idea is that it takes more effort to motivate persons with low education to participate in a task that may appear difficult to handle for them.

The question, of course, is whether the hypothesized differences between early and late respondents are empirically valid. So far, empirical tests of such differences are inconclusive and theoretically not very convincing.

Background

Empirical studies on differences between early and late respondents are rather scarce. Most studies are also quite old and sometimes difficult to understand in terms of the issues on which the surveys focus.

Newman (1962: 39) examined demographic differences among early and late respondents and concluded that no general relationships between time-of-responding and such variables existed: "There were no significant differences between early and late respondents' sex, age, income or dwelling place. On the other hand, occupational patterns were significantly different and late respondents were more apt to give no answer or check 'don't know' in reporting expenditures."

Baur (1947-48) came to similar conclusions on the basis of a mail survey that asked some 6,000 veterans on their plans for further education and training. In this study, the questionnaires were grouped into five eight-day intervals "according to the number of days between the original mailing date and receipt of the questionnaire" (p. 595). These intervals were then studied for differences on such variables as "interest in the topic of the survey"(in the sense of the item: "I have plans for further education"; yes/no), formal level of education (high school; yes/no), parenthood (yes/no) and age (under/over 30 years old). Baur reported that the interest in the topic of the survey as well as the proportion of high-school graduates among the respondents decreased monotonically over the five time intervals. The other two variables, however, showed no systematic regression trends.

Goudy (1976), reporting a study on work and retirement among older men in Iowa, found some minor differences between early and later respondents, but concluded that the differences were not substantial.

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Filion (1975) surveyed a sample of people purchasing hunting permits and found that late respondents tended to be younger and from more rural areas. Later respondents also tended to have less hunting experience overall and a lower kill rate despite more total hunting days compared to early respondents.

Mayer and Pratt (1966) investigated individuals injured in automobile accidents in Michigan. While many variables showed no significant differences, both race and occupation varied systematically between early and later respondents. Specifically, Caucasians and professionals, particularly managers, salespeople, and clerical staff, were over-represented in the early respondent group.

Others have found significant differences in the educational levels of early versus later respondents (Frazen and Lazarsfield, 1945; Clausen and Ford, 1947; Suchman and McCandless, 1940). For example, Ellis, Endo, and Armer (1970) found that later respondents had lower performance in highschool and college than early respondents.

A mail survey by Blasius & Reuband (1996) among adult residents of Cologne, Germany, showed some differences in the demographics of early and later respondents. However, attitudes and reported behaviors (e.g., attitude towards the death penalty, believing in God, tax fraud) were quite similar over the different waves.

Donald (1954) asked whether or not "member involvement in a voluntary organization parallels the motivation to complete and return a questionnaire"(p. 104). This question was checked on a mail survey of 2,768 members of the League of Women Voters. Statistically, she examined whether the wave when the questionnaire was returned correlated with the degree of involvement in the organization indicated by the respondents. Involvement was measured by the percentage of agreement to questions such as "currently holds office", "currently on committees", "volunteers more than 2 hours monthly" or "president's interest in respondent's ideas = 'quite a bit' or more". The hypothesis was confirmed statistically "for every measure of participation over the first three waves of response" (p. 104). In contrast, variables such as age, income, family status were not systematically related to the waves.

Theoretically, it is of course not convincing to study the relationship of just any variable to the time of responding. It would be much better to look at variables where the content of the item is related in some way to the psychology of providing an answer. Consequently, other researchers have limited the examination of differences to the variable of interest in the study. Stanton's (1939) study is more convincing in this regard. He reported a survey on 11,169 teachers "inquiring among other things about their possession and use of classroom radio receiving facilities". One could possibly argue from today's perspective that those teachers who had such radio facilities should be more willing to answer items on that topic than teachers who did not have radio facilities. The study, however, did not bear out this hypothesis.

Lambert and Harrington (1990) studied differences in customer service performance levels between early and later respondents to a survey of purchasing agents and found no significant differences. While some have found stronger and more favorable opinions among early respondents (e.g., Pearl and Fairley, 1985, Green, 1991; Dalecki, 1993), others have failed to find differences with regard to the variables under investigation (e.g., Suchman, 1962; Goudy, 1976; McDonagh and Rosenblum, 1965).

In summary, the literature examining differences between early and later respondents remains inconclusive. Methodologically, all studies suffer from the fact that the measurement of the time of response was only possible in terms of a few discrete waves. An additional source of error is to equate the time of receiving a mailed-in questionnaire with the time of response. A filled-out questionnaire can, for example, rest some time on the respondent's desk before being mailed. In addition, the mail can be slow, or the envelope with the questionnaire may spend a weekend somewhere in a letter box before being picked up. It is equally difficult to determine the exact beginning of the survey period, because similar delays also hold for sending the

questionnaire to the respondents. Later respondents, therefore, cannot properly be distinguished from persons who got informed late. Even receiving a questionnaire on time does not guarantee that it is looked at in such a way that it becomes an issue where a decision on responding or not responding is required. Thus, to examine any early-vs.-later respondent hypotheses, it would be desirable to have real-time measures of the point-in-time when the respondent turns in his or her questionnaire. Additionally, the survey should be prepared in such a way that everyone is informed about the survey's purpose, its content and possible follow-up processes. Such conditions are only possible for on-line surveys and particularly for employee surveys that are usually preceded by an intense information campaign positioning the survey.

This paper reports two cross-cultural studies which meet these conditions. They investigate whether systematic relationships exist between the time of questionnaire return and other variables such as job satisfaction, organizational commitment, and demographic characteristics of the respondent's country of operation.

Research Questions and Hypotheses

We investigate the following hypotheses: (1) There is a systematic relationship between general job satisfaction and the time of returning the questionnaire in an employee survey. Specifically, we anticipated that early respondents should be more satisfied with their job than later respondents. (2) Organizational commitment is related to the time of returning the questionnaire. Persons with higher organizational commitment were expected to return their questionnaires earlier.

In addition, we report the correlations of all single substantive items of the employee surveys with the time of returning the questionnaire in order to see whether there exist any systematic relationships of attitudes or opinions to return time.

Finally, we study whether different regions differ systematically in their questionnaire return behavior. Previous informal evidence had suggested that Asian countries may not only have higher participation rates, but also reach these rates more quickly than Europeans. Hence, early respondents would be more frequent among Asians.

Methods

In the following, we consider two employee surveys. Survey 1 is an employee survey conducted in a German high-tech company (called ABC in the following) with some 22,000 employees. World-wide employee surveys are repeated within ABC on a biannual basis. The survey was conducted in a two-week time period in May 2000.

The questionnaire consisted of a core of 95 items that were asked in all of ABC's subsidiaries. The items covered the broad spectrum of issues typically asked in general employee surveys. That is the items assessed the employees' attitudes and opinions on their working conditions, work itself, advancement, pay and benefits, coworkers and team, immediate supervisor, manager above immediate supervisor, information within ABC, productivity, customer, partners, and corporate culture (Borg, 2000a, 2002). These items were complemented

by ten items, which focused on particular "hot topics" of strategic importance. Then, there were ten items covering local and regional topics relevant only for the particular subsidiary. Finally, there were eight items for managers only.

The questionnaire was organized block-wise, beginning with items on working conditions and ending with items on corporate culture. All items were formulated as Likert items with a five-point responses scale ranging from "fully disagree" (1) to "fully agree" (5). Eleven of the item blocks were concluded with the item: "All in all I am satisfied with [X]", where X was replaced by the topic of the item block, e.g., by "my immediate supervisor" or "the information at ABC". The items were translated into twelve languages. An English language version was always offered.

The administration of the survey was preceded by an intensive information campaign. This campaign explained the purpose of the survey, its topics, and the planning for follow-up processes. The campaign used the company's intranet, but also traditional communication means such as face-to-face communication through management. A particular web site was set up with questions and answers on the survey, with calls for participation by the various managers up to the CEO, with reviews on previous employee surveys and their results, etc. User statistics showed that more than 80% of ABC's employees visited this web site, many of them repeatedly because the web site was updated regularly with new information on the survey. Additionally, posters calling for participation in this survey were placed throughout the company in prominent places such as cafeterias or entrance halls. Shortly before the beginning of the administration period, bright yellow stickers showing the beginning time of the survey were placed on these posters. Finally, ABC's board wrote to all managers to stress that it expected their active support of this survey and, in particular, asking them to motivate their respective subordinates to participate. Participation remained voluntary, however.

The survey was administered as follows. On 0:00 a.m. local time of the first day of a two-week data collection period, each employee received a personal e-mail which informed him or her, once more, about the survey, its purpose and processes. The mail contained a link to the intranet questionnaire. Activating this link, the questionnaire was assembled. The employee could first choose his or her preferred language. Then, some demographic variables such as organizational unit, name of immediate supervisor, job level of employee, country etc. were filled out automatically by a computer program in this questionnaire by pulling the relevant piece of information from ABC's personnel data bank on the basis of the employee's unique user number. The respondent would then proceed to the substantive items. He or she was free to scroll up or down in the questionnaire, and change previous answers. Items could also be skipped but no extra "no opinion" category was offered.

Upon sending off the questionnaire, the employee's user code was separated from his or her survey data. User code and responses were stored in different files. The exact time of returning the questionnaire was stored with the person's answer scores. The user code was then blocked so that no employee could answer the survey twice. Also, the return statistics for this employee's organizational unit were then augmented on the survey's web site. Real-time return rates for some 50 subsidiaries of the company were accessible to everyone throughout the period of survey administration. This information was meant to help keep participation up. No

individual reminders were sent through the intranet in order not to add to the concerns about the survey's anonymity.

Survey 2 is an employee survey in German IT company conducted in April 2002. The company operates world-wide. It is the global market leader in its field. Its workforce comprises some 30,000 employees. The questionnaire contained almost the same items as survey 1, except for special items that were presented in certain countries only or items that addressed particular hot topics of the company. Such items are of no interest here. We only study the common core of items presented to all employees worldwide. There were 96 such items, most of them copied verbatim from survey 1. They were presented in a block format as in survey 1. That is, the questionnaire began with a block of items on working conditions, and then proceeded with item blocks on goals and tasks, advancement, pay and benefits, team and cooperation, immediate supervisor, manager above immediate supervisor, information, corporate culture, productivity and quality, customer, partners and suppliers, trust in senior management, and commitment, respectively. In all other respects, survey 2 was carried out similarly to survey 1: It was announced early and repeatedly, it was promoted with emphasis through different media, and it was administered in the same way as survey 1.

Results

Participation

In survey 1, a total of 17,578 out of 21,972 employees or 80% returned filled-out questionnaires within the two-week time period of survey administration. Item non-response was less than 3% for almost all of the 95 core items, except for some items that required special knowledge (e.g., items on partners and suppliers of the company).

In survey 2, a total of 24, 007 employees out of a total work force of 30,267 participated in the survey, a response rate of 79%. Item non-response was similar to survey 1, i.e. almost all items were answered by at least 95% of the respondents.

Time of returning the questionnaire

In both surveys, the time of returning the questionnaire was first measured relative to the GMT standard. Then, time corrections of up to 10 hours were made depending on the employee's location to normalize time to a variable "minute M after the effective start of the survey for employee E" ("Time").

Theory-driven analyses

A scale value of general job satisfaction (JS) was first computed by averaging for each person his or her response scores over the ten items of the type "All in all, I am satisfied with [X]", where X is a place holder for the dimensions working conditions, work itself, advancement opportunities, pay, benefits, coworkers and team, immediate supervisor, manager above immediate supervisor, information, and company, respectively. The scores of these ten satisfaction items were mildly positively correlated among each other so that they formed a

dominant first principal component, which is typical for employee surveys (Borg, 2000b; Spector, 1997). The summated scale "job satisfaction" (JS) is internally consistent with Cronbach's Alpha equal to 0.83 in survey 1 and 0.85 in survey 2. JS and the time of returning the questionnaire correlate linearly with 0.022 and -0.004, respectively. Neither coefficient is significantly different from zero.

We now ask whether JS and Time are possibly related in a non-linear fashion. Moreover, we also test whether there is a relationship between the variance of JS and Time. The answer is provided by Figures 1 and 2, respectively.

Figure 1
Box plot of job satisfaction distribution over half days since survey beginning in which questionnaire was returned

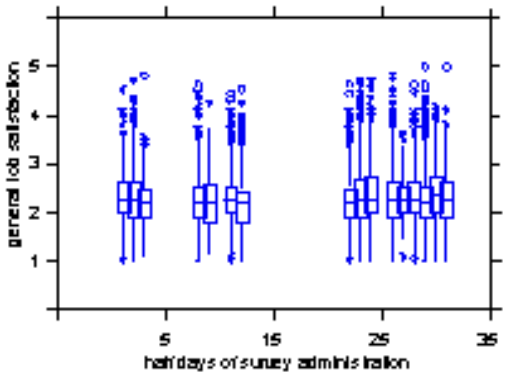
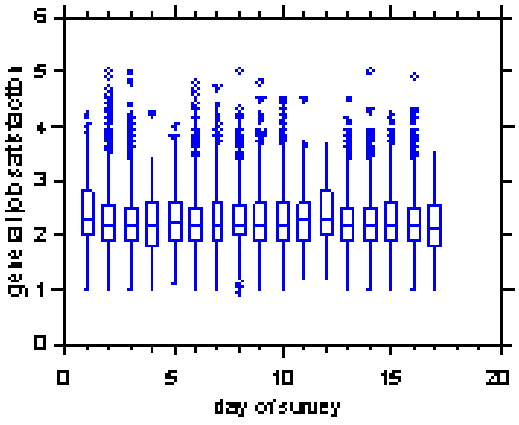


Figure 2
Box plot of job satisfaction over days of survey time



In Figure 1, one first notes two empty blocks. They correspond to two weekends, respectively. The second weekend is preceded by two additional days with no returns. They are due to a virus alarm which led to a complete shut-down of the company's intranet system for two days. That is, the survey was physically suspended for two entire days. In survey 2, no such interruptions occurred and the employees continued to return their questionnaires also on weekends. Figures 1 and 2 show the distributions of the JS indices for the various time intervals of the surveys' administration periods as boxplots. It is easy to see that the JS medians of the different time-related distributions lie almost exactly on horizontal straight lines in both surveys. Moreover, the JS distributions are also very similar in terms of variance, with no obvious relationship of variance properties to the time axis. Hence, JS and the point-in-time of survey returns are independent.

The same question is answered in Table 1 for 15 different subsidiaries in survey 1. One notes that the correlation of JS and Time is almost zero in all cases, even though the JS means differ substantially. Just three coefficients pass the 5% significance level. Boxplots as in Figure 1 for each region (not shown here) demonstrate, furthermore, that the variance of JS is not related to Time for any subsidiary. For survey 2, a different data breakdown is provided because the organization of this company was far too complex for a simple breakdown into subsidiaries. Instead, we here use the language chosen by the responding employee as a criterion of stratification. Table 2 shows that JS and Time are essentially uncorrelated for each of the different language groups.

Table 1
Mean (m), standard deviation (s), and N for job satisfaction (JS) and for organizational commitment (OC), respectively, in 16 region of survey 1; correlation (r) of JS and OC with time of returning questionnaire; *indicate significance of r at the 5% level.

	Job Satisfaction			Org. Commitment		
Region	N	m	s	r	m	s	r
Germany, Swiss, Austria	7402	3.78	0.51	-0.02	3.97	0.60	-0.03*
Italy	253	3.84	0.49	-0.13*	4.09	0.53	-0.07
Scandinavia	460	3.70	0.44	0.06	3.94	0.51	0.03
France	399	3.51	0.55	0.03	3.81	0.65	0.06
Spain, Portugal	273	3.63	0.57	-0.03	3.94	0.60	-0.12
UK	481	3.60	0.54	-0.05	3.86	0.61	-0.05
North America	3613	3.74	0.56	0.00	3.81	0.66	-0.02
India	400	3.73	0.56	0.01	4.04	0.59	-0.05
Japan	865	3.29	0.62	-0.10*	3.51	0.64	-0.09*
Rest of East Asia	536	3.46	0.59	0.02	3.68	0.61	-0.02
Latin America	602	3.76	0.55	-0.02	4.01	0.59	-0.05
Eastern Europe	285	3.78	0.51	-0.05	4.02	0.57	0.10
South Africa	345	3.78	0.55	-0.03	4.02	0.57	-0.10*
Nordic countries	476	3.70	0.53	-0.16*	3.98	0.58	-0.10*
Australia, New Zealand	374	3.62	0.52	0.02	3.90	0.57	0.02
total	17563	3.71	0.55	0.02*	3.90	0.63	0.03*

Table 2
Mean (μ), standard deviation (σ), and χ for job satisfaction (JS) and for organizational commitment (OC), respectively, by language chosen to answer the employee survey (survey 2); correlation (r) of JS and OC with day of returning questionnaire; * indicates significance of r at the 5% level.

		Job Satisfaction			Org. Commitment		
Language used in survey	N	μ	σ	r	μ	σ	r
Chinese	10,705	2.20	.92	.01	2.03	.61	.00
French (Europe)	706	2.25	.00	.03	1.91	.60	.07
French (Canada)	90	1.96	.83	.03	1.88	.49	.02
English	9,635	2.22	.94	-.03*	2.02	.61	.01
Russian	268	2.16	.49	-.08	1.99	.50	.01
Spanish	706	2.25	.00	-.06	1.91	.59	-.05
Portuguese	479	2.30	.97	.11*	1.91	.57	.09
Korean	245	2.87	.63	.08	2.97	.60	.15
Japanese	1116	2.54	.97	.01	2.34	.60	-.05*
total	23,950	2.24	.95	.00	2.03	.61	.00

We now ask the same questions for the second scale, organizational commitment (OC). We compute OC from the following items, which prove unidimensional in a factor analysis: (1) I have full trust in ABC's board, (2) I have full trust in the management below board level, (3) I am proud to work for ABC, (4) I fully support ABC's strategy. (5) I seriously consider leaving the company within one year (R), and (5) All in all, I am satisfied with ABC as a company. Cronbach's Alpha for these items is 0.85 in survey 1 and 0.82 in survey 2.

Figures 3 and 4 show how OC is are related to Time. Again, there are no systematic relationships. Tables 1 and 2 make clear that this is also true for subsidiaries or language groups, respectively. These groups differ substantially in terms of OC, but OC is nowhere substantially related to Time. However, one notes that the few correlations that are large enough to be significant are all negative, as expected (Donald, 1954). Hence, one may conclude that the hypothesis that OC is related to Time is supported to a very weak degree.

Figure 8
Distribution of organizational commitment over half-day of survey administration

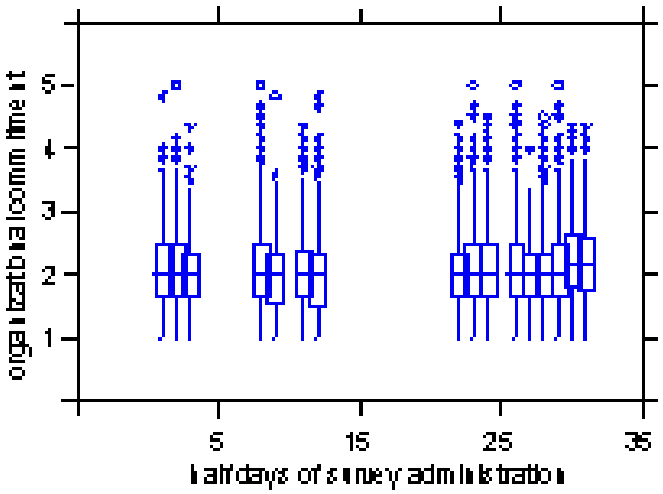
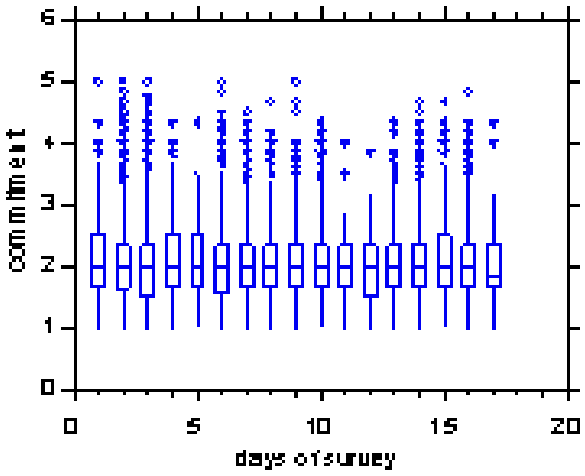


Figure 4
Boxplots for commitment versus day of survey administration

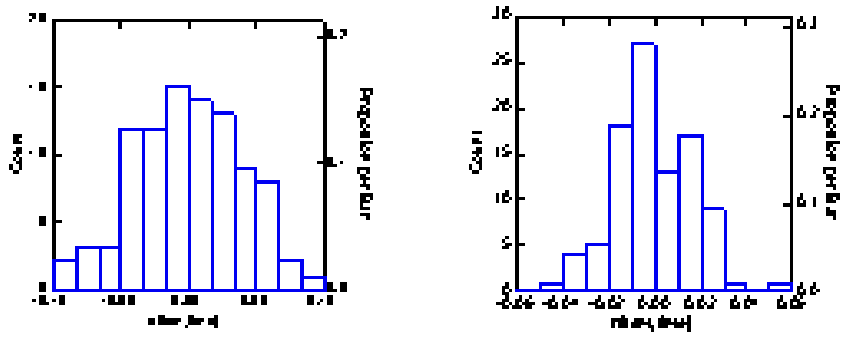


Exploratory analyses

We now ask whether there are any items in this survey which correlate substantially with the time of returning the questionnaire. For survey 1, we find that the correlation coefficients of all 95 items are within the range of –0.088 to +0.085. Their mean value is 0.000, with a standard deviation of 0.039. Figure 5 shows the distribution of these correlation coefficients in its left panel. It is obviously close to normal.

Figure 5

Distributions of correlations between survey items and time of returning questionnaire for survey 1 (left panel) and for survey 2 (right panel)



For survey 2, we find even smaller correlation coefficients. The mean value for the 96 items of this survey is –0.001, with a range of –0.047 to +0.055. The right panel of Figure 3 shows their distribution, which is again close to normal.

Finally, we turn to relations of Time to demographic variables. The data show that there are no differences in terms of speed of response among senior managers, managers, and non-managers. However, in survey 1 there is an interesting difference for regions. The company distinguishes five major regions of operation: (1) Americas, (2) Asia-Pacific, (3) Europe, (4) Headquarter Germany, and (5) German field. Table 3 shows that the return accumulation differs substantially among these regions. (Remember that there was no data collection on weekends and on two days of a virus alert.) One notes that the Americas as well as the non-German Europeans are slow responders in this survey. That is not true for the two German regions, where the build-up of returns is almost linear. Asia-Pacific, in turn, shows a double-peaked pattern of responding to the survey. Indeed, further analysis shows that while Japan and China are slow, other Asian reached almost 100% returns on the first or second day of the survey. Table 2 shows the questionnaire returns for survey 2. Here one notes the usual pattern with high returns on the first days and a pronounced decay process thereafter.

Table 8
Build-up of questionnaire returns over the days of survey administration for different regions (survey 1)

		Americas		Asia-Pacific		Europe (w/o Germany)		Germany HQ		Germany Field	
Day #	Weekday	#	col%	#	col%	#	col%	#	col%	#	col%
1	Th	13	.1	37	1.8	5	.1	67	1.5	3	.2
2	Fr	15	.4	531	26.5	99	2.3	611	14.2	116	9.0
5	Mo	3	.1	2	.1	106	2.4	573	17.1	171	13.3
6	Tu	0	0	1	.0	153	3.5	625	11.0	198	15.4
7	We	110	2.7	24	1.2	318	7.3	863	11.6	242	18.8
12	Mo	880	24.3	407	20.3	1057	24.2	1115	19.6	307	23.9
13	Tu	863	21.4	278	13.9	568	13.0	140	2.5	0	0
14	We	528	13.1	223	11.1	562	12.9	260	4.6	121	9.4
15	Th	1334	33.1	418	20.9	1206	27.6	716	12.6	78	6.1
16	Fr	154	4.8	83	4.1	251	5.7	305	5.4	48	3.7
		4040	100	2004	100	4365	100	5696	100	1284	100

Table 4

Build-up of questionnaire return over the days of survey administration for different regions (survey 2)

		Americas		Asia-Pacific		Europe (w/o Germany)		Germany	
Day #	Weekday	#	col%	#	col%	#	col%	#	col%
1	Th	1538	32.6	1666	52.7	1831	36.8	3781	37.2
2	Fr	418	8.9	186	5.6	533	10.7	1181	11.7
5	Mo	35	.7	10	.3	17	.3	43	.4
6	Tu	45	1.0	18	.6	53	1.3	39	.4
7	We	364	7.7	180	5.1	459	9.2	846	8.3
12	Mo	301	6.4	245	8.3	352	7.1	480	4.7
13	Tu	163	3.5	98	3.3	204	4.1	349	3.4
14	We	126	2.7	139	4.7	157	3.2	438	4.3
15	Th	136	2.9	179	5.1	252	5.1	527	5.2
16	Fr	20	.4	9	.3	19	.4	31	.3
		4717	100	2952	100	4977	100	10169	100

Discussion

This study has not led to convincing evidence that early and later respondents differ in terms of their attitudes and opinions. Early respondents, in particular, do not seem to be more satisfied with their jobs, nor do they have a stronger commitment toward their company. Nor is it true that early respondents have a stronger tendency towards extreme degrees of satisfaction or dissatisfaction. None of these hypotheses is convincingly supported by any other item of the two surveys either. The only possible exceptions are a few significant – although very small – correlations of return time with organizational commitment for some subgroups of the surveys. Yet, one may conclude that finding that 5 out of 24 coefficients (see OC columns in Tables 1 and 2) barely reach significance is not worth building much theory upon.

These findings should be received positively in survey research, particularly in organizational survey research, because if there were such trends relating attitudes to the time of responding, then reaching high participation rates would be crucial. Moreover, some researchers have suggested that nonresponse can be assessed using later respondents (Ferber, 1948-49, p. 671). If one believes that later respondents are almost like non-respondents, then these findings suggest that non-respondents do not differ much from respondents. In hindsight this does not seem too surprising, because there are many reasons for not participating in an organizational survey. Low commitment or general dissatisfaction are but two of them. Some of the more frequently mentioned reasons are: „I forgot“; „I don’t fill this out if I don‘t get paid for it“; „I am

satisfied with the way things are“; „one more questionnaire does not tip the scale“; „too much work“; „I don’t have the time“; „appears too difficult to answer“; „my proficiency in the survey’s language is not good enough“; „I misplaced the questionnaire“; or „I don’t expect any changes from this“ (Borg 2000a).

Participation, moreover, is likely to depend on personality characteristics such as agreeableness and on context variables such as social norms (Rogelberg, 2001). That is, only a small fraction of the non-respondents should, in any case, be likely not to respond because of their negative attitudes. This is consistent with a finding by Sosdian & Sharp (1980). They reported that a telephone survey on a random sample of the initial 58% non-respondents led to an 80% participation of these non-respondents in the survey. Hence, the percentage of “true refusers” was at most 12%, not 58%.

The “non-trends” of the present study indicate that the exact time of filling out and returning the questionnaire does not depend on the person’s level of satisfaction or commitment. Rather, it may simply be a function of the person’s time management. Employee surveys may be a particular case among surveys in this regard, because for employee surveys it is almost always very clear to the respondent from when to when the survey is running. In general social surveys, in contrast, this is usually not known to the respondent. The number and timing of survey waves, for example, is unpredictable to the respondent. The respondent, in fact, cannot even be certain that there are any additional waves.

Theoretical arguments that the results may be attributable to the electronic mode of collecting the data in this survey are not obvious. However, this mode made it possible to return a questionnaire virtually in the last minute with a guarantee that it would become a part of data analysis. In a mail survey, in contrast, respondents who are very eager to make their voice heard may not want to risk sending off their questionnaires later because it may get stuck in the mail and not make it into data analysis. Hence, the electronic data collection may have enabled the respondents to actually make use of the entire time window of the survey administration.

Another and more serious consideration is that the non-effects observed in our surveys are largely due to the good information about the survey given to the employees before the administration. Without such information, the employees may have been in situation that more closely resembles a respondent in a public opinion survey, i.e., in particular, that the respondent would not be certain about the exact time window of survey administration. Yet, at least in employee surveys, preparing the survey by a well-planned information campaign should be considered normal practice (Borg, 2000a, 2002; Church & Waclawski, 2000; Edwards et al., 1993, 1997; Kraut, 1996). Hence, it is normal that employees can plan their participation for a certain day without having to risk that their answers may be lost. Yet, the hypothesis that under conditions of poor information early respondents do indeed differ from later respondents remains worthy of further empirical studies.

That participation behavior does not only depend on attitudes and demographics, but also on a variety of other considerations and conditions is also obvious from survey 1. In this survey, the local survey coordinators in some of the Asian countries had made it their personal goal to reach a return rate of 100% in the first days. This goal was publicly communicated ahead of time

and supported by management, making it very visible. These subsidiaries then indeed showed peculiar step-functions in their return behaviors, some of them reaching 100% returns on the very first day.

Finally, more generally speaking, the return statistics in Table 3 also indicate that the common notion that questionnaire returns are always negatively accelerated growth functions where most questionnaires are turned in early in the administration period is not always valid. It does not hold, in particular, for survey 1 (see Table 3). This means, in general, that if the time window of the survey administration is very clear, then getting concerned about low participation behavior at the beginning of the survey administration may be unnecessary, because it may just be the case that the employees planned to participate towards the end of the data collection period. This observation, however, needs to be studied further, because few survey administrators would want to rely on such expectations and passively await further returns.

Conclusion

This paper investigated whether early respondents differ systematically from later respondents on demographic and attitudinal measures. A notable distinction in this study versus others asking this question is the use of a precise measure of time for each employee. Time was measured as the number of minutes elapsed since the start of the survey. Using an organizational intranet for survey administration enables this precise measure of time. Past studies used waves of respondents to assess differences rather than a true measure of time lapsed.

Generally, we found no differences between early and later respondents. For survey researchers, findings of equivalence support the notion that survey responses are not biased by time of participation.

This finding should be comforting for applied organizational survey research. However, one should not take it for granted. The reason that no time-related gradients of satisfaction or commitment were found in our studies seems to be due to a particular feature of organizational surveys. They are typically prepared and most often accompanied by an intense information campaign that makes clear to everyone that the survey runs in a particular time window. In such conditions of high transparency, employees can plan when to respond and need not rush to complete the survey. Without such an information campaign, however, employees who are more motivated to participate should be more likely to respond earlier because this way they make sure that their voice is actually heard. When the survey is run in waves, this tendency should be most pronounced, because later respondents, then, become indeed non-respondents if they are not caught by another wave.

Another typical peculiarity of organizational surveys is that respondents are often informed in real time about the current response rates of the various organizational units. This was also true in the studies reported above. Relatively low return rates then lead to increased motivation or even to management interventions aimed at catching up with the other teams. Indeed, in practice, a high response rate to an organizational survey is often taken as an indicator of good management. No manager likes to have the lowest response rate in his or her area of responsibility. In our studies, Asian mangers, in particular, were almost compulsive about

reaching 100%. Employees also do not like to come out last with their team, thereby showing "no commitment" to an important common initiative. But, then, at least some proportion of the later respondents answer later not because they planned so but because they are becoming motivated only at a later time to do so. Rogelberg (2001) suggests that most non-respondents are "passive" non-respondents. If this is the case, then such efforts to get higher response rates simply succeed in activating these people. Yet, including (or excluding) these individuals should not result in any bias. If one assumes that at least some of the later respondents are potentially passive non-respondents, then nothing in our findings hints at such a bias. Hence, it is good organizational practice to make an effort to capture the more passive employees also. It does not affect the statistics, but high response rates avoid many practical problems such as having to deal with validity concerns and being able to break down the data to smaller units.

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